



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,087	10/02/2003	Peter G. Amos	003-089	7762
36844	7590	02/09/2006	EXAMINER	
CERMAK & KENEALY LLP 515 E. BRADDOCK RD ALEXANDRIA, VA 22314			PATEL, VISHAL A	
			ART UNIT	PAPER NUMBER

3673

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/676,087	AMOS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Vishal Patel	3673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 7,9,11,13,27,29,30 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,8,10,12,14-26,28,31 and 33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Newly submitted claims 27 and 29-32 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: See the restriction sent on 7/23/04.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 27, 29-30 and 32 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-6, 8, 10, 12, 14-26, 28, 31 and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, “first layer of a base material”, “the thermal conductivity of the base material” and “a third layer of a base material”, these claim limitations make the claim unclear, since applicant has not specified, which base material is mentioned in line 6. For examination purpose the base material mentioned in line 6 is the base material of the first layer. Similarly this error is in all independent claims (claim 14, lines 3, 6 and 7; claim 21, line 3, 6 and 7).

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-4, 10, 12, 14-20, 21-24, 31 and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Paprotna et al (US. 6,733,234).

Regarding claims 1-4, 19 and 21-24: Paprotna discloses a seal assembly comprising a layered structured including a first layer of base material (26), a second layer of thermal insulating material on top of the first layer (48), a third layer (50) of a base material on top of the layer of thermal insulation, a spring side support (40 of figure 3) and the layered structure is connected on two sides of the spring side support (the side support connects the layered structure at two locations 44, one being adjacent to an inner side and the other being adjacent to an outer side). The layer of thermal insulating material comprises a woven insulating material (48). The third layer of the seal assembly comprises oxidation resistant material (material of 50 is oxidation resistant because 50 can be made of metals, composites, ceramics or combination thereof).

The thermal insulating material having a thermal conductivity lower than the thermal conductivity of the base material (this is the case since the base material of 26 is in a solid form and the thermal insulating material is in the form of woven insulating material 48). Furthermore as stated in the reference the first layer is made of metals and the second layer is made of metals,

Art Unit: 3673

composites, ceramics or some combination of the three (hence metals, composites, ceramics and combinations of the three would have lower thermal conductivity than the single metal material of the first layer).

The first layer and the third layer are connected with each other at the two sides and the second layer is held between the first and third layers (this is the case as seen in figure 3 and as indicated in column 4, lines 20-23, the layers 46 are spot welded to connect directly to the first layer 26).

A connector plate having an inner connector band and an outer connector band (inner side of 26) and the layered structure is arranged within the connector plate with the first layer comprising the inner connector and the third layer comprises (outer side of 48) the outer connector band. The connector plate is connected on two sides of the spring side support

Regarding claims 12, 14-17 and 33: The seal assembly comprises combustor liners (10 and 12), a combustor liner seal between the combustion liner segments (seal between 10 and 12) and the combustor liner seal comprises the layered structure (the seal is formed by the layered structure).

Regarding claims 10, 20 and 31: Cooling holes arranged within the spring side support (cooling holes formed in the thermal insulating material which is woven).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3673

7. Claims 5-6, 8, 18, 25-26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paprotna in view of Kalkbrenner (US. 3,975,114).

Paprotna discloses the invention substantially as claimed above but fails to disclose that the first layer is welded to the third layer. Kalkbrenner teaches to have a seal assembly having first layer, a second layer and a third layer. The first layer is welded (welds 54) to the third layer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the first layer of Paprotna to be welded to the third layer as taught by Kalkbrenner, to fasten to layers to each other (column 3, line 1 of Kalkbrenner).

Regarding claims 6 and 8:

Paprotna discloses the invention substantially as claimed above but fails to disclose that all layers and the spring support are connected by a weld. Kalkbrenner discloses to have a seal assembly having multiple layers, a spring support (top layer) and a bottom layers of the multiple layers are connected by a weld (each of the four layers showed in figure 4 are connected by the welds 54). It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the spring support to be connected to the third layer as taught by Kalkbrenner, to provided a fastened structure (column 3, line 1 of Kalkbrenner).

#### ***Response to Arguments***

8. Applicant's arguments filed 11/14/05 have been fully considered but they are not persuasive.

Applicants' argument that Paprotna does not disclose material the material of the insulating layer is of lower thermal conductivity than the base material of the first layer is not persuasive because as indicated above that the first layer is metallic (cobalt metal) and the

Art Unit: 3673

second layer is made of metals, ceramics, composites or combinations of the three (where composites, ceramics and material made from combinations of metals, ceramics and composites have lower thermal conductivity than metallic member of the first layer).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vishal Patel whose telephone number is 571-272-7060. The examiner can normally be reached on 6:30am to 8:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather C. Shackelford can be reached on 571-272-7049. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VP  
February 6, 2006

A handwritten signature in black ink, appearing to read 'Vishal Patel', with a stylized flourish extending from the end.

Vishal Patel  
Patent Examiner  
Tech. Center 3600